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L2: Entry 61 of 80

File: USPT

Sep 9, 2003

DOCUMENT-IDENTIFIER: US 6616946 B1

TITLE: Triblock copolymer hollow particles for agent delivery by permeability change

Detailed Description Text (39):

Random copolymers of ethylene oxide (EO) and propylene oxide (PO) also have LCSTs or CPs (Bailey and Koleski "Polyethylene Oxide" F. E. Bailey and J. V. Koleske Academic Press, NY (1976)) and have two reactive end groups, so they may be conjugated by one end to other polymers or reactants. Temperature-sensitive block copolyethers are also available from BASF. Triblocks of PEO-PPO-PEO are called Pluronic[®].RTM. or poloxamers, and tetrablocks are called Tetronics[®].RTM. or poloxamines. In the case of EO-PO random or block copolymers, a range of compositions, and molecular weights of these polymers having various reactive end groups can be obtained from Shearwater Polymers, Inc. (Huntsville, Ala.). The compositions are selected on the basis of data available on their cloud points. (Bailey and Koleski and BASF catalog) ("Polyethylene Oxide" F. E. Bailey and J. V. Koleske Academic Press, NY (1976)). A wider range of molecular weights of these copolyethers may be prepared than with the vinyl copolymers, since their synthesis does not use a free radical chain transfer initiation process.

Detailed Description Text (81):

A polymerization reaction may be carried out using a photoinitiator that can initiate free-radical polymerization and/or crosslinking. Examples of suitable photoinitiators include benzoin methyl ether, 1-hydroxycyclohexylphenyl ketone, and Darocure and Irgacure products, preferably Darocure 1173.RTM. and Irgacure 2959.RTM.. Also suitable are reactive photoinitiators, which can be incorporated, for example, into a macromer, or can be used as a specific comonomer. Examples are described in European Patent No. EP 0 632 329. The photopolymerization can then be initiated by actinic radiation, for example light, in particular UV light having a suitable wavelength. The spectral requirements can, if necessary, be controlled appropriately by addition of suitable photosensitizers.

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L2: Entry 66 of 80

File: USPT

Aug 14, 2001

DOCUMENT-IDENTIFIER: US 6274614 B1

TITLE: Methods, compositions and articles for reducing or preventing the effects of inflammation

Brief Summary Text (54):

PDT involves the local or systemic application of a light-absorbing photosensitive agent, usually a porphyrin derivative, which accumulates selectively in target tissues. Upon irradiation with visible light of an activating wavelength, reactive oxygen species are produced in cells containing the photosensitizer, which promote cell death. For example, in the treatment of tumors, the photosensitization process is thought to give rise to singlet oxygen, an activated derivative of molecular oxygen, which may oxidatively react with a number of specific sites in cells and tissues. As a consequence, the tumor cells undergo irreversible damage at a subcellular levels, especially in the cell membrane and mitochondria. In vivo, tumor destruction is the result of a complex interplay of multiple factors affecting the framework of connective tissue that physically supports the stroma of a tumor and the vascular tissue that nourishes the tumor. Zhou, "Mechanisms of Tumor Necrosis Induced by Photodynamic Therapy", J. of Photochem. and Photobiol., B: Biology, 3, 299-318 (1989).

Brief Summary Text (55):

It is clear that photosensitizers are preferentially taken up and accumulate in tumor tissue and that some tumor stroma cell necrosis is selectively and directly caused by PDT. However, vascular injury and the subsequent anoxia of tumor cells are also involved in the tumor necrotizing process induced by PDT. Particularly in this latter event, PDT-induced tumor necrosis has been considered the result of an acute inflammatory reaction to the physicochemical changes in the vascular wall. The rapid reduction in blood supply, as well as the onset of inflammatory edema in the tumor, leads to hypoxia or even anoxia of the photoinjured neoplastic cells, which eventually undergo necrosis. The overall damaging process is multiplied by the release of vasoactive or tissue-lysing substances such as histamine, proteases and acid phosphatases from photodamaged mast cells and neutrophils in the tumor stroma, which are also associated with inflammatory processes. Zhou, "Mechanisms of Tumor Necrosis Induced by Photodynamic Therapy", J. of Photochem. and Photobiol., B: Biology, 3, 299-318 (1989).

Brief Summary Text (56):

It has been recognized that the acute inflammatory phase usually induced by PDT in approved cancer treating protocols is a double-edged sword. The study of experimental tumor models has shown that, after PDT is administered, a protein- and neutral lipid-rich exudate infiltrates into the extracellular space and accumulates against a "wall" of perinecrotic vital cells ("hypoxic cells"), which are stuck against the "ghosts" of necrotic cells. From a positive cancer treatment perspective, the inflammatory exudate may help to deliver protein-bound photosensitizers to the inner areas of the tumor that would otherwise be difficult to reach. On the other hand, this flow of inflammatory exudate may also bring oxygen and nutrients and thus help to nourish cells engaged in wound repair processes. Therefore, the occurrence of an inflammatory state associated with PDT has been recognized a fact of life that often complicates the treatment of cancerous tumors. Freitas, "Inflammation and Photodynamic Therapy", J. Photochem.

and Photobiol., B: Biology, 8:340-41 (1991).

Brief Summary Text (58):

Further, Hill et al. disclose that more than three hours elapsed after the injection of the photosensitive agent before the surgery and the irradiation step took place, which would have allowed sufficient time for the photosensitizer to be absorbed by the tissues associated with injury, but would also have allowed the photosensitizing agent to spread to other non-target areas of the eye. Because the authors report that large, transient areas of avascular conjunctiva were produced, with the avascular region not being limited to the filtration bleb until a full four weeks after the surgery, it is clear that undesirably large areas of the eye were affected by the treatment. In view of the well-known potentially destructive, necrotic effect of PDT in other applications, there is a need for the reduction or prevention of inflammation in such a way that the degree and extent of pharmacological activity can be reliably controlled.

Brief Summary Text (64):

The method of the invention is particularly advantageous when the injured tissue is highly sensitive to further injury or inflammation, such as in ocular tissue, because appropriate photosensitizers are not, in themselves, antiproliferative in effect or cytotoxic to delicate tissues in the absence of activating irradiation. Further, because most photosensitizing agents are non-toxic to human tissue unless activated by light and because the photosensitizing agent of the invention is capable of penetrating into injured tissue relatively quickly, the degree of pharmacologic activity is easily controlled both by the extent of the irradiation and either the extent of physical contact with the photosensitizer or its concentration, e.g., in the bloodstream, at the time of irradiation. Consequently, the therapeutic effect of the invention is more easily regulated than known pharmacologic anti-fibrotic techniques.

Detailed Description Text (4):

A "photosensitizing agent" is a chemical compound that, when exposed to light of a wavelength capable of being absorbed by the photosensitizer, absorbs light energy to result in the desired physiological effect, e.g., a controlled anti-inflammatory effect. The photosensitizing agents of the present invention preferably have an absorption spectrum that is within the range of wavelengths between 350 nm and 1200 nm, which absorption spectrum may be tailored to the desired penetration in a manner known per se, preferably between about 400 and 900 nm and, most preferably, between 600 and 800 nm.

Detailed Description Text (5):

Another property of photosensitizers in general that is of particular significance in the practice of the present invention is a relative absence of toxicity to cells in the absence of the photochemical effect and the ready clearance from tissues in the absence of a target-specific interaction between particular cells and the photosensitizer.

Detailed Description Text (6):

The photosensitizer of the invention can be any photosensitizing agent suitable for photodynamic therapy ("PDT") that is capable of penetrating into the injured tissue to be treated and causing the desired degree of biodistribution in less than one hour. Whether this criterion is met by a potential photosensitizer candidate can be easily and quickly determined by the following simple test:

Detailed Description Text (8):

2. Add the photosensitizer being tested to the cells at concentrations of 1-3 $\mu\text{g/mL}$, in the presence of 10% serum.

Detailed Description Text (9):

3. Remove the excess photosensitizer drug by centrifugation following various

periods of incubation (e.g., 5, 15, 30 and 60 minutes).

Detailed Description Text (11):

5. Determine the concentration of a tested photosensitizer in cell lysates by fluorescence against appropriate standards.

Detailed Description Text (12):

A particularly potent group of photosensitizers includes green porphyrins, which are described in detail in Levy et al., U.S. Pat. No. 5,171,749 issued Dec. 15, 1992, which is incorporated herein by reference. The term "green porphyrins" refers to porphyrin derivatives obtained by reacting a porphyrin nucleus with an alkyne in a Diels-Alder type reaction to obtain a mono-hydrobenzoporphyrin. Typically, green porphyrins are selected from a group of porphyrin derivatives obtained by Diels-Alder reactions of acetylene derivatives with protoporphyrin under conditions that promote reaction at only one of the two available conjugated, nonaromatic diene structures present in the protoporphyrin-IX ring systems (rings A and B).

Detailed Description Text (15):

As shown in FIG. 6, R.sup.1, R.sup.2, R.sup.3 and R.sup.4 are non-interfering substituents that do not appreciably affect the activity of the compound in the method and composition of the invention. More specifically, the term "non-interfering substituents" is used to mean substituents that do not destroy the ability of the green porphyrin to act as a photosensitizer capable of being absorbed by injured tissue to exert a pharmacological effect in less than one hour. For the compounds of FIGS. 6 and 7, generally, R.sup.1 and R.sup.2 are each, independently, electron-withdrawing substituents or any other activating substituents that are sufficiently electron-withdrawing to increase the rate of the Diels-Alder reaction, which can proceed with both A and B rings but, preferably, occurs in only one ring. Examples of suitable R.sup.1 and R.sup.2 groups include carbalkoxy (2-6C), alkyl (1-6C) sulfonyl or aryl (6-10C) sulfonyl, aryl (6-10C), cyano, and --CONR.sup.5 CO-- where R.sup.5 is aryl (6-10C) or alkyl (1-6). One of R.sup.1 and R.sup.2 may also be hydrogen, so long as the other is an electron-withdrawing substituent of sufficient strength to facilitate the Diels-Alder reaction. Most commonly, R.sup.1 and R.sup.2 are carbalkoxy groups, preferably methyl or ethyl carboxy esters. Preferred compounds are those in which R.sup.1 and R.sup.2 are the same and are carbalkoxy, particularly carboethoxy.

Detailed Description Text (42):

Preferably, the photosensitizing agent is administered in a liquid, gel, or gelatinous solid pharmaceutical composition, either alone with water, or together with other pharmaceutically acceptable excipients, such as are disclosed in Remington's Pharmaceutical Sciences, Mack Publishing Co., Easton Pa. (Gennaro, ed. 1990), which is hereby incorporated by reference. When a liquid, the pharmaceutical composition containing the photosensitizer can be a suspension or an emulsion. In particular, liposomal or lipophilic formulations are often desirable. The photosensitizing agent of the invention may be included within liposomes, attached to their surface, or both. Suitable methods for preparing liposomes are well-known in the art. The inclusion of green porphyrin compounds in such preparation is described, for example, in Allison et al., U.S. Pat. No. 5,214,036 issued May 25, 1993 and Desai et al., co-pending application Ser. No. 08/489,850 filed Jun. 13, 1995, both of which are incorporated herein by reference. If suspensions or emulsions are used, suitable excipients include water, saline, dextrose, glycerol, and the like. These pharmaceutical compositions may also contain minor amounts of nontoxic auxiliary substances, such as wetting or emulsifying agents, antioxidants, pH buffering agents, and the like.

Detailed Description Text (43):

The pH of the formulation depends mainly on the particular use and the concentration of the photosensitizer, but preferably ranges from about 3 to about 8. Preferably, the photosensitizer is maintained at a neutral pH (e.g., about 6.5).

to about 7.5) to prevent its adhering to the containers in which it is placed, as occurs at pH values approaching physiological levels, and to ensure activation of the photosensitizer. Thus, the formulation of a photosensitizer in an electrolyte solution containing a balanced salt buffer at pH 6.5, but containing no fetal bovine serum ("FBS"), is a suitable embodiment. The reason the FBS is omitted is because it contains antigenic components that could exacerbate an inflammatory reaction. If the photosensitizing agent adheres to the containers in which the pharmaceutical composition containing it is being kept, an appropriate non-antigenic ingredient, such as human serum albumin, may optionally be added in an amount that does not interfere with the photosensitizing agent adhering to the injured tissue being treated.

Detailed Description Text (49):

Examples of suitable surfactants include the poloxamer surfactants, which represent a series of molecules that are block copolymers of ethylene oxide and propylene oxide, either alone or taken in admixture with a phospholipid such as egg lecithin. Another example of an emulsion commercially available from Green Cross is Fluosol-DA 20%, which contains perfluorodecalin and perfluorotripropylamine emulsified with the poloxamer surfactant, Pluronic F-68. The perfluorochemical emulsions and their effects in mammals are described more fully in Bolland et al., J. Pharm. Pharmacol., 39:1021-24 (1987), the disclosure of which is incorporated herein by reference.

Detailed Description Text (51):

Modes of Bringing Tissue into Contact with Photosensitizer

Detailed Description Text (52):

The reduction or prevention of inflammation in accordance with the present invention is effected in a relatively straightforward manner by bringing the injured tissue (or the tissue to be injured or being injured) into contact with the photosensitizing agent under conditions that enable the formation of a strong association between the photosensitizing agent and the target tissue, while minimizing the concentration of the photosensitizer and, so far as is practicable, localizing the area of contact to the target injured tissue.

Detailed Description Text (53):

When the cells to be protected from inflammation are contained within a live, intact animal, the photosensitizer may be administered locally or systemically. The photosensitizing agent may be administered by injection so long as the particular mode of injection allows for rapid clearance of the photosensitizer from the body. For example, intravenous injection would be suitable. Alternatively, the photosensitizer may be topically or enterally applied, e.g., by painting or spraying onto the surface of the tissue to be treated, or via patches or implants, which are typically removable at the conclusion of a pre-determined photosensitizer contact time.

Detailed Description Text (54):

When the target tissues to be protected from inflammation are delicate ocular tissues, topical external administration is preferred due to the localized nature of contact with the eye achievable with topical administration, which results in a greater margin of safety. In an especially preferred embodiment, the photosensitizer of the invention is applied with the article of the invention, which comprises the photosensitizer and an absorbent applicator. The absorbent applicator comprises any absorbent material that is sterile or is capable of being sterilized, that easily releases the photosensitizes on contact with injured tissues, and that does not chemically react with the photosensitizing agent. Preferably, the absorbent material is also inexpensive and disposable. Examples of suitable absorbent applicators include drug-soak sponges and non-lint-producing flexible webs. A drug-soak sponge, such as a Weck cell, is the preferred absorbent applicator. When such an applicator is used, it is preferably saturated with the

pharmaceutical composition of the invention and topically applied to the target tissues during or shortly after the occurrence of injury, e.g., during a surgical procedure.

Detailed Description Text (55):

The contacting step can take place over a wide variety of temperatures, avoiding only those temperatures great enough to denature or otherwise deleteriously affect the injured tissue and those temperatures low enough to minimize the cellular uptake of the photosensitizer. Preferably, the contacting step takes place at a temperature in the range from about 5.degree. C. to about 40.degree. C., preferably, from about 15.degree. C. to about 37.degree. C. and, most preferably, at ambient temperature.

Detailed Description Text (57):

In the method of the invention, the subject is administered an amount of the photosensitizing agent, or a mixture of photosensitizing agents, in one or several dosages. The photosensitizing agents of the invention are dosed in a fashion consistent with good medical practice, taking into account the nature of the inflammation being prevented or reduced, the species and medical condition of the subject, the presence of any other drug in the subject's body, the purity and chemical form of the photosensitizer, the mode of administration, the rate and degree of absorption expected, and other factors known to practitioners. A therapeutically effective amount of photosensitizer is an amount that is effective to reduce significantly, upon exposure to light, the proliferation of fibroblasts, thus ameliorating the inflammatory response and the undesirable effects that may be associated with inflammation, such as increased vascularity and/or scar tissue formation.

Detailed Description Text (58):

The dose of the photosensitizing agent will vary with the target tissue and, if administered intravenously or systemically, will be limited by the weight and optimal blood level of the animal. Suitable systemic amounts per dose are typically less than about 1.0 mg/kg of body weight, preferably in the range of from about 0.25 to 0.75 mg/kg per dose and, most preferably, about 0.15 to about 0.50 mg/kg per dose. A systemic dose of BPD as the photosensitizer would exceed 0.3 mg/kg only under unusual circumstances. These dosage ranges are intended to be suggestive and should not necessarily be considered as limiting, since the individual reactions of particular subjects will also vary.

Detailed Description Text (59):

Depending on the photosensitizing agent and the mode of administration, an equivalent optimal systemic blood level can be established, but it is difficult to do because the photosensitizer preferably clears very rapidly. Thus, there can be a dramatic difference between the concentration of the photosensitizer in the bloodstream at the moment of injection and the concentration at the time of treatment with light. For example, the concentration of BPD at the moment of intravenous injection may range from about 1-10 mg/mL, while, at the time of light exposure, may only be in the range of from 0.5-0.05 ug/mL. If by topical administration, no photosensitizer at all is typically detectable in the blood.

Detailed Description Text (60):

When administered topically or systemically, the dose is best described in terms of the concentration of the composition and the length of the time of contact with the target tissue. A generally effective range of concentrations for the photosensitizing agent is from about 0.1 to about 10 mg/mL, preferably from about 0.1 to about 5 mg/mL and, most preferably, from about 0.25 to about 2.0 mg/mL. The contact suitably involves applying the composition to one or more surfaces of the injured tissue with the pharmaceutical composition of the invention. Topical contact with the photosensitizer generally takes place for at least one minute, preferably under five minutes, and even more preferably from about one to two

minutes. The time of contact depends on such factors as the concentration of the photosensitizing agent in the composition, the tissue to be treated, and the particular type of composition.

Detailed Description Text (61):

After a predetermined contact time with the photosensitizer, the excess photosensitizer is preferably removed from the area of treatment. If the photosensitizer is being systemically administered, the photosensitizer is selected to have, not only rapid pharmacokinetic characteristics, but also susceptibility to rapid clearance from the body. If the photosensitizer is being topically administered, the excess is preferably removed by irrigating or flushing away with a physiologically acceptable, chemically inert fluid, such as normal saline or BSS (basic salt solution), or washing off with water or some other solvent. Again, these protocols are not intended to be limiting in view of the wide variation permitted in protocol design.

Detailed Description Text (62):

Following the step of bringing the injured tissue, or pre-injured tissue, into contact with a composition containing the photosensitizer of the invention, the tissue is subjected to exposure with light having a wavelength that is absorbed by the photosensitizing agent and leads to the reduction or prevention of inflammation. The term "low-dose PDT" in this application refers to a dose that does not cause evident cell damage, necrosis or erythema, but exhibits only an anti-inflammatory effect. Because the total PDT dose depends on a combination of the dose of the photosensitizing agent and the dose of the irradiating light, low-dose PDT may be administered in combinations of relatively high photosensitizer doses and low light doses or, on the other hand, combinations of relatively low photosensitizer doses and high light doses. The latter low photosensitizer/high light combination can also be achieved by administering a relatively high dose of photosensitizer, followed by an unusually long "incubation" time before being irradiated with light. Therefore, a wide variety of conditions, all producing a relatively low dose of PDT overall, would be suitable for the invention.

Detailed Description Text (63):

Likewise, a wide variety of different combinations of photosensitizer doses, contact times, and modes of administration are suitable. However, the following rough guidelines may be useful. Short contact (less than one hour) with high doses of the photosensitizer e.g., 2 mg/mL applied topically, would generally be equivalent to a low photosensitizer dose, e.g., 0.15 mg/kg administered intravenously. However, even after a high dose of photosensitizer administered intravenously, delaying irradiation with light to a later time, e.g., more than three hours, after administration of the photosensitizing agent can also result in low-dose PDT because, if the photosensitizer is capable of rapid clearance, very little of it may still be present in the tissues after three hours.

Detailed Description Text (65):

topical application or localized injection of less than 2 mg/mL of a benzoporphyrin derivative ("BPD") photosensitizer, which is left in contact with the target tissue for less than ten minutes;

Detailed Description Text (69):

less than 15 J/cm.^{sup.2} applied between 0-3 hours after administration of the photosensitizer; or

Detailed Description Text (70):

up to 100 J/cm.^{sup.2} applied later than six hours after photosensitizer administration.

Detailed Description Text (71):

During the irradiation step, any light that the photosensitizer absorbs and that is

appropriate for use with the injured tissue may be used, e.g., from about 380 to about 850 nm, depending upon the photosensitizer and upon the depth of tissue penetration desired, preferably from about 400 to about 700 nm. For general anti-inflammatory applications, light in the visible portion of the electromagnetic spectrum, e.g., red light, blue light or even UVA light, may be used. Light having a wavelength shorter than 400 nm is acceptable, but not preferred because of the potentially damaging effects of UVA light. Light having a wavelength longer than 700 nm is also acceptable, but not particularly preferred because it is difficult to see, thus making the visual control of irradiation almost impossible. For ocular applications, red light is preferred because this eliminates any potentially harmful effects from the blue and UVA spectral ranges on the sensitive retina of the eye.

Detailed Description Text (77):

No single protocol appears to be desirable for all cases at this time. However, typical protocols will include either a single treatment or an initial treatment followed optionally by 1-4 additional treatments. Local treatments with topical photosensitizer administration can be repeated every 3 or 4 days. However, with systemic administration of the photosensitizer, repeated treatments are generally spaced about a week apart, or longer, to avoid any undesirable effects from the accumulation of excess photosensitizer.

Detailed Description Text (82):

Filtration surgery was performed on one eye in six normal rabbits. A Weck cell sponge was saturated with a 2 mg/mL aqueous solution of the photosensitizer benzoporphyrin derivative monoacid ring A (BPD-MA, also known as "BPD-verteporfin"). During surgery, the saturated Weck cell was used to apply BPD-MA topically for two minutes to the sclera and conjunctiva in the surgical field. After washing out the excess drug with BSS, both the sclera and conjunctiva were exposed to red light having a wavelength of about 690 nm, which was delivered by a light emitting diode ("LED") placed at a distance of about 1 cm from the tissue to be irradiated. Each of the six rabbits used in this experiment received a different dose of light, specifically, 0, 3, 6, 12, 18 and 24 J/cm^{sup.2} over a 30-second to 4-minute time period. The treated rabbits were followed for 11-12 days after surgery by determining filtration bleb height, bleb vascularity (indicative of inflammation), and reduction in intraocular pressure ("IOP"). The data obtained on day 5 and day 11 are shown below in Tables 1A and 1B respectively.

Detailed Description Text (88):

The photosensitizer used in the example was prepared as follows: A liposomally formulated benzoporphyrin derivative, monoacid ring A, BPD-MA or BPD-verteporfin was supplied by QLT PhotoTherapeutics, Inc. as a lyophilized powder and was reconstituted with sterile distilled water shortly before use. The BPD was reconstituted to 1.98 mg/mL was used to saturate the 3 mm cut end of a Weck cell. In control groups, the Weck cell was saturated with basic salt solution ("BSS").

Detailed Description Text (92):

The control eye received the same photosensitizer and irradiation subconjunctivally as the surgical eye, but without a fistula being created. The control eye was used to test toxicity and as a basis for detecting a decrease in IOP for the surgical eye. The time at which the BPD-MA was applied was varied, as follows:

Detailed Description Text (97):

BPD treatment at 48 hours post surgery consisted of the application of the 3 mm cut end of a Weck cell saturated with a 2 mg/mL aqueous solution of BPD-MA (or placebo) laid on the conjunctiva over the filtration bleb for two minutes, followed by washing out the excess photosensitizer and exposure to red LED light having a wavelength of 688 nm for one minute.

Detailed Description Text (114):

Adverse events were few and not related specifically to the use of the photosensitizer. A fibrin clot within the first four days was observed in six rabbits, three of which were in Group 2 and three in Group 3. In each case, the fibrin was resolved without sequelae by the end of the first week. One rabbit died at day 0, which was felt to be a complication of anesthesia. No other adverse events were reported.

Other Reference Publication (24):

Straight, R.C., et al., "Preliminary studies with implanted polyvinyl alcohol sponges as a model for studying the role of neointerstitial and neovascular compartments of tumors in the localization, retention and photodynamic effects of photosensitizers," Advances in Experimental Medicine and Biology (1985) 193:77-89.

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File: PGPB

Sep 20, 2001

DOCUMENT-IDENTIFIER: US 20010022970 A1

TITLE: Intracorporeal medicaments for photodynamic treatment of disease

Summary of Invention Paragraph:

[0009] The present invention is directed to new intracorporeal photodynamic medicaments and certain medical uses of such medicaments, and methods for treatment using such medicaments, for treatment of human or animal tissue, wherein a primary active component of such medicaments is a halogenated xanthene or a halogenated xanthene derivative, and more preferably Rose Bengal or a functional derivative of Rose Bengal. The halogenated xanthenes constitute a family of potent photosensitizers that become photoactivated upon illumination of the treatment site with visible wavelengths of light. Such medicaments are suitable for intracorporeal administration, and are thus intracorporeal medicaments. Such medicaments can also be called pharmaceutical compositions or agents.

Detail Description Paragraph:

[0059] various surfactants, such as anionic surfactants, including sodium laurate and sodium lauryl sulfate; cationic surfactants, including cetyltrimethyl ammonium bromide, tetradecyltrimethylammonium bromide, benzalkonium chloride, octadecyltrimethylammonium chloride, cetylpyridinium chloride, dodecyltrimethylammonium chloride, hexadecyltrimethylammonium chloride; nonionic surfactants, such as Polaxamer (231, 182, 184), Brij (30, 93, 96, 99), Span (20, 40, 60, 80, 85), Tween (20, 40, 60, 80), Myrj (45, 51, 52), Miglyol 840; various bile salts, such as sodium cholate, sodium salts of taurocholic, glycholic, desoxycholic acids; lecithin;

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